Special Issue

Structure and Properties of Sugar-Processing Microbial Enzymes

Message from the Guest Editor

The huge diversity of the chemical composition of carbohydrates and their associated structural complexities represents a challenge for the enzymes acting on them. Microbial sugar-processing enzymes face this challenge when discriminating sugar epimers, or when transglycosylases catalyze the transfer of a donor sugar to an acceptor sugar, operating in an aqueous environment. Not surprisingly, we found a wide diversity of such enzymes, such as glycosyl hydrolases and transferases, polysaccharide lyases, and carbohydrate esterases, and, importantly, their associated non-catalytic carbohydrate-binding modules. Determination of the structural basis of sugar recognition, which is mainly based on numerous and weak interactions, with the important participation of solvent molecules, is a challenging task. Obviously, this partial structural knowledge frequently results in failure during the design of enzyme variants with desired specificities. The scope of this Special Issue of *Microorganisms* is focused on structural and functional studies of microbial sugar-processing enzymes and recent advances in our understanding of their substrate-binding modes and catalytic mechanisms.

Guest Editor

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Deadline for manuscript submissions

closed (30 November 2022)

Microorganisms

an Open Access Journal by MDPI

Impact Factor 4.2
CiteScore 7.7
Indexed in PubMed

mdpi.com/si/125080

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Message from the Editor-in-Chief

"Microorganism" merges the idea of the very small with the idea of the evolving reproducing organism is a unifying principle for the discipline of microbiology. Our journal recognizes the broadly diverse yet connected nature of microorganisms and provides an advanced publishing forum for original articles from scientists involved in high-quality basic and applied research on any prokaryotic or eukaryotic microorganism, and for research on the ecology, genomics and evolution of microbial communities as well as that exploring cultured microorganisms in the laboratory.

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